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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,570	02/01/2006	Johnny Warnelov	GOTALA P112US	6160
20210	7590	03/02/2010	EXAMINER	
DAVIS & BUJOLD, P.L.L.C. 112 PLEASANT STREET CONCORD, NH 03301				FORD, JOHN K
ART UNIT		PAPER NUMBER		
3744				
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03/02/2010		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/566,570	WARNELOV ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	John K. Ford	3744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 19 October 2009.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 11-20 is/are pending in the application.  
 4a) Of the above claim(s) 13, 16, 18 and 20 is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 11, 12, 14, 15, 17 and 19 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>2/1/06</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: _____ .

Applicant's response of October 19, 2009 has been carefully considered. Applicant's election of the second species as shown in Figures 2 and 3 (claims 11, 12, 14, 15, 17 and 19), with traverse, is acknowledged. Applicant has also elected Group I, claims 11, 12, 14, 15, 17 and 19, drawn to a heat collector apparatus. The latter election of invention is made without traverse. Applicant's election of the species as shown in Figures 2 and 3 in the reply filed on October 19, 2009 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). The election of species and the election of invention requirements are both deemed proper and made final. An action on the merits as to claims 11, 12, 14, 15, 17 and 19 follows. The remainder of the claims (claims 13, 16, 18 and 20) are withdrawn at this time.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 11, 12, 14, 15, 17 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "mainly parallel" in claim 11 is a relative term which renders the claim indefinite. The term "mainly parallel" is not defined by the claim, the specification does

not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. How parallel do the tubes have to be to be "mainly parallel"? The term "meandering way" in claim 11 is a relative term which renders the claim indefinite. The term "meandering way" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. How "meandering" a connection will satisfy or not satisfy the claim is not ascertainable, nor does it even appear to be descriptive of the disclosed structure. The tubes are connected to one another in a very specific way (namely serially as opposed to a "meandering way"), aren't they? The phrase "connection means" is vague. If applicant is trying to invoke 35 USC 112, sixth paragraph, the MPEP has approved means plus function language to accomplish this end. If applicant does not wish to invoke means plus function language the examiner would suggest not using the word "means" in this recitation. Note, in this latter instance that functional claim language in an apparatus claim will not be given significant patentable weight – consistent with the guidance set forth in MPEP 2114. The same is true for functional language found in claim 12; functional claim language in an apparatus claim will not be given significant patentable weight – consistent with the guidance set forth in MPEP 2114. Try to claim what the structure is as opposed to how it is designed.

In claim 14, the examiner would suggest changing "manufactured" to - - made of - - or - - comprises - - or other equivalent phrase, consistent with MPEP 2114.

The term "a large number" in claim 14 is a relative term which renders the claim indefinite. The term "a large number" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

The term "relatively large" in claim 14 is a relative term which renders the claim indefinite. The term "relatively large" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

The term "about" which occurs four times in claim 14 is a relative term which renders the claim indefinite. The term "about" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim 15 is replete with indefinite terms such as "generally are connected", "preferably is fixed through welding", "suitably are arranged" , "suitably have such a length that.....can be connected through conventional tube couplings" and "when a connection in parallel is done.... which leads to a heat pump." To begin with it is unclear if the heat pump is part of the claim of not because it is preceded by so many alternative and vague phrases like "can be" and "when". Positively set forth some structure in the claim. Use different dependent claims to set forth different structures rather than trying to put all of these vaguely recited alternatives into one claim.

In claim 17, "such as" is vague. Positively set forth structure without exemplary language prefacing it. Similarly, the terms "circular movement paths with a symmetry axis" and "oscillating axis" in claim 17 are not understood either in the claim or the specification. The term "particularly if" is vague. Recite structure positively not with vague language like "particularly if."

The term "certain limited bendability" in claim 19 is a relative term which renders the claim indefinite. The term "certain limited bendability" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

The term "suitably have an increased bendability" in claim 19 is a relative term which renders the claim indefinite. The term "suitably have an increased bendability" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 11 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Figure 3 of JP 07-316868.

JP '868 discloses structure (see Figure 3 of JP 07-316868) that appears to meet all of the unequivocally set forth limitations of claim 11.

Claims 11, 14, 15 and 19 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Figures 7-9 of Partin et al (USP 4,538,673).

Partin discloses structure (see Figures 7-9 of Partin et al) that appears to meet all of the unequivocally set forth limitations of claim 11. Regarding claim 14, Partin is made of plastic and the actual dimensions used are a function of design variables that are dictated by the conductivity of the strata into which the collect is placed as well as the size and heat transfer rate of the heat pump (unknown from applicant's disclosure).

Absent any indicia of unobvious results (none shown in the specification), routine optimization of result effective variables is not the subject matter of patents. See *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). Regarding claims 15 and 19, to the extent that they are understood Partin appears to disclose both parallel and serial connection of the collectors to the heat pump and, regarding claim 19, inherently the omission of an aeration channel element (in Figure 7 of Partin at the bottom of the

collector tubes there are no aeration channels) would inherently make the respective elements 50 more bendable relative to one another than elements 72.

Claim 11 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Figure 1 of Pellmyr (USP 3,028,149).

Aeration channels 8 connect adjacent 180 degree bends with one another in Figure 1 of Pellmyr.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Figure 3 of JP 07-316868 or Figures 7-9 of Partin et al (USP 4,538,673) as applied to claim 11 above, and further in view of DE 2910370 (Figure 3).

To have fabricated the respective structures of Figure 3 of JP '868 and Figure 8 of Partin in the manner taught by Figure 3 of DE '370 (two mating halves with an integrally formed connection means) would have been obvious to one of ordinary skill in the art to simplify manufacture and thereby reduce costs.

Claim 17 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John K. Ford whose telephone number is 571-272-4911. The examiner can normally be reached on Mon.-Fri. 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on 571-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John K. Ford/  
Primary Examiner, Art Unit 3744

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